What is claimed is:

1. A process for the production of an anhydrosugar alcohol, without using organic solvents, the process comprising:
    - heating a selected sugar alcohol or monoanhydrosugar alcohol starting material, with stirring, until molten;
    - dehydrating the starting material, under vacuum and while maintaining heat and stirring, in the presence of an acid catalyst to produce a dehydrated anhydrosugar alcohol mixture; and
    - purifying the anhydrosugar alcohol.
2. The process of Claim 1 wherein the acid catalyst is a soluble acid.
3. The process of Claim 2 wherein the acid catalyst is selected from the group consisting of sulfuric acid, phosphoric acid, p-toluenesulfonic acid, and p-methanesulfonic acid.
4. The process of Claim 1 wherein the acid catalyst is a zeolyte powder.
5. The process of Claim 4 wherein the zeolyte powder is selected from the group consisting of CBV 3024, 5534G, T-2665, and T-4480.
6. The process of Claim 1 wherein the acid catalyst is an acidic ion exchange resin.
7. The process of Claim 6 wherein the acidic ion exchange resin is selected from the group consisting of AG50W-X12, Amberlyst 35, Amberlyst 15, RCP21H, and Dowex 50Wx4.

8. The process of Claim 6 wherein the acidic ion exchange resin is added in an amount giving from about 0.01 to about 0.15 gram equivalents of resin to sugar alcohol.
9. The process of Claim 1 wherein the purification comprises vacuum distillation of the dehydrated anhydrosugar alcohol mixture followed by melt crystallization.
10. The process of Claim 1 wherein the purification comprises vacuum distillation of the dehydrated anhydrosugar alcohol mixture followed by a re-distillation.
11. The process of Claim 1, further comprising a final separation of the anhydrosugar alcohol by centrifugation.
12. The process of Claim 1, further comprising a final separation of the anhydrosugar alcohol by filtration.
13. A process for the production of an anhydrosugar alcohol, without using organic solvents, the process comprising:
    - heating a selected sugar alcohol or monoanhydrosugar alcohol starting material, with stirring, until molten;
    - dehydrating the molten starting material, under vacuum and while maintaining heat and stirring, in the presence of an acid catalyst, to produce a dehydrated anhydrosugar alcohol mixture;
    - vacuum distilling the dehydrated anhydrosugar alcohol mixture to produce an anhydrosugar alcohol distillate;
    - melt crystallizing the anhydrosugar alcohol distillate to produce a crystallized anhydrosugar alcohol product; and

- centrifuging the crystallized anhydrosugar alcohol product to produce a very pure anhydrosugar alcohol.

14. The process of Claim 13 wherein the acid catalyst comprises a soluble acid.
15. The process of Claim 14 wherein the soluble acid is selected from the group consisting of sulfuric acid, phosphoric acid, p-toluenesulfonic acid, and p-methanesulfonic acid.
16. The process of Claim 13 wherein the acid catalyst comprises a zeolyte powder.
17. The process of Claim 16 wherein the zeolyte powder is selected from the group consisting of CBV 3024, CBV 5534G, T-2665, and T-4480.
18. The process of Claim 13 wherein the acid catalyst comprises an acidic ion exchange resin.
19. The process of Claim 18 wherein the acidic ion exchange resin is selected from the group consisting of CBV 3024, CBV 5534G, T-2665, T-4480, AG50W-X12, Amberlyst 15, Amberlyst 35, RCP21H, and Dowex 50Wx4.
20. The process of Claim 13 wherein the dehydration is performed at a temperature of from about 98°C to about 191°C.
21. The process of Claim 13 wherein the dehydration is performed at a temperature of from about 98°C to about 130°C.
22. The process of Claim 13 wherein the dehydration is performed at a temperature of from about 98°C to about 120°C.
23. The process of Claim 13 wherein the dehydration is performed at a vacuum pressure of from about .01 Torr to about 40 Torr.

24. The process of Claim 13 wherein the dehydration is performed at a vacuum pressure of from about 0.1 Torr to about 10 Torr.

25. The process of Claim 13 wherein the dehydration is performed at a vacuum pressure of from about 1 Torr to about 10 Torr.

26. The process of Claim 13 wherein the vacuum distillation is performed at a vapor temperature of from about 155°C to about 170°C and a pot temperature of at least the distilling point of the dehydrated anhydrosugar alcohol.

27. The process of Claim 13 wherein the vacuum distillation is performed at a vapor temperature of from about 160°C to about 170°C and a pot temperature of at least the distilling point of the dehydrated anhydrosugar alcohol.

28. The process of Claim 13 wherein the vacuum distillation is performed at a vapor temperature of from about 165°C to about 170°C and a pot temperature of at least the distillation point of the dehydrated anhydrosugar alcohol.

29. The process of Claim 13 wherein the vacuum distillation is performed at a vapor temperature of 170°C and a pot temperature of at least the distillation point of the dehydrated anhydrosugar alcohol.

30. The process of Claim 13 wherein the vacuum distillation is performed at a vacuum pressure of from about .01 Torr to about 40 Torr.

31. The process of Claim 13 wherein the vacuum distillation is performed at a vacuum pressure of from about 0.1 Torr to about 10 Torr.

32. The process of Claim 13 wherein the vacuum distillation is performed at a vacuum pressure of from about 1 Torr to about 10 Torr.

33. A process for the production of purified isosorbide, without the use of organic solvents, the process comprising:

- heating sorbitol powder at a temperature of from about 98°C to about 105°C, with stirring, until molten;
- dehydrating the melted sorbitol by catalysis with an acidic ion exchange resin, added in an amount giving from about 0.01 to about .15 equivalents, under vacuum pressure of from about 1 Torr to about 10 Torr, and while maintaining stirring and temperature, to form an isosorbide mixture;
- vacuum distilling the dehydrated isosorbide at a pot temperature of approximately 180°C and a vapor temperature of approximately 170°C, and a vacuum pressure of from about 1 Torr to about 10 Torr, to form an isosorbide distillate;
- melt crystallizing the isosorbide distillate by heating the distillate to at least approximately 65°C and then cooling the distillate, over from about 30 minutes to about 45 minutes, to a temperature of about 25°C to about 35□C to form a slurry-like isosorbide solution;
- centrifuging the isosorbide solution and;
- collecting the purified isosorbide.